CHAPTER 1
PURPOSE AND BENEFITS OF THE PROPOSED ACTION

1.1. INTRODUCTION

Wind Hunter, a limited liability corporation (LLC), proposes to construct, operate and maintain a wind turbine electrical generation facility, in Valley County, Montana, approximately 29 miles north-northwest of the City of Glasgow (Figure 1.1). The Valley County Wind Energy Project (VCWEP) would consist of up to a 500-megawatt (MW) wind energy development and a 30-mile 230kV transmission line with associated access/maintenance roads and electrical collector system with substation facilities. The VCWEP would be constructed in phases; the first phase would be 50 MW. There would be 34 wind turbines with a nameplate capacity of 1.5 MW each that are proposed to be constructed on private leased land, Montana State trust lands or public lands managed by the Bureau of Land Management (BLM). The proposed 230kV transmission line would be energized at 161kV to the match the voltage of Western Area Power Administration's (Western) transmission system and will interconnect the VCWEP to a new Western substation, known as Antelope Creek located just east of the existing Richardson Coulee Substation owned by Northwestern Energy (NWE).

1.2. PURPOSE AND NEED FOR THE PROJECT

1.2.1. Wind Generation

The purpose of the VCWEP is to construct and operate a new electrical generation resource using wind energy that would meet a portion of VCWEPed growing regional demands for electricity produced from non-renewable and renewable resources.

In the Pacific Northwest Electric Power Planning and Conservation Act (16 United States Code [USC] Section 839[1] [B], December 5, 1980), Congress established that the development of renewable resources should be encouraged in the Pacific Northwest. The Act defines wind power as a renewable resource (Section 839a [16]). The Act established a regional council consisting of two members each appointed by the states of Oregon, Washington, Idaho and Montana for three-year terms.

Recent national and regional forecasts predict increasing consumption of electrical energy will continue into the foreseeable future, requiring development of new generation resources to satisfy the increasing demand. The Energy Information Administration (EIA) published a national forecast of electrical power through the year 2025. The EIA projected that total electricity demand would grow from 3,675 billion kilowatt hours in 2002 to 5,485 billion kilowatt hours in 2025, increasing at an average annual rate of 1.8% per year. Rapid growth in electricity use for computers, office equipment and a variety of electrical appliances in the residential and commercial sectors is only partially offset by improved efficiency in these electrical applications (U.S. EIA 2004). The EIA, created by Congress in 1977, is a statistical agency of the U.S. Department of Energy that

provides policy-independent data, forecasts and analyses regarding energy and its interaction with the economy and the environment).

The Western Electricity Coordinating Council (WECC) forecasts electricity demand in the western United States. According to WECC's most recent coordination plan, the 2001-2011 summer peak demand requirement is predicted to increase at a compound rate of 2.5% per year (WECC 2002).

Based on data published by the Northwest Power and Conservation Council (NWPCC), electricity demand for the NWPCC's four-state Pacific Northwest planning region (Washington, Oregon, Idaho, and Montana) was 20,080 average MW in 2000 (NWPCC 2003).

As shown in Table 1.2-1, the NWPCC's recently revised 20 year demand forecast projects that electricity demand in the region will grow from 20,080 average MW in 2000 to 25,423 average MW by 2025 (medium forecast), an average annual growth rate of just less than 1% per year. While the NWPCC's forecast indicates that the most likely range of demand growth (between the medium-low and medium high forecasts) is between 0.4 and 1.50% per year, the low to high forecast range used by the NWPCC recognizes that growth as low as –0.5% per year or as high as 2.4% per year is possible, although relatively unlikely (NWPCC 2003).

Table 1.2-1 Projected Pacific Northwest Electricity Demand, 2000-2025

Forecast Scenario	**Electricity Demand (Average Megawatts)**			**Growth Rate (% Change)**	
	2000	2015	2025	2000-2015	2000-2025
Low	20,080	17,489	17,822	-0.92	-0.48
Medium - Low	20,080	19.942	21,934	-0.05	0.35
Medium	20,080	22,105	25,423	0.64	0.95
Medium - High	20,080	24,200	29,138	1.25	1.50
High	20,080	27,687	35,897	2.16	2.35

Source: NWPCC 2003

Local and regional markets for "green power" have been increasing in recent years. As of February 2003, more than 32 states offer green pricing or are in the process of preparing programs. Montana and surrounding states all have green pricing programs. Green power is supplied from a variety of renewable energy resources, including wind and solar energy, biomass and geothermal. As shown in Table 1.2-2 as of December 2002 more than 1,400 MW of new renewables based generation capacity has been installed or is

Figure 1-1 Project Area Map

planned because of customer demand created in green power markets (NREL).

Table 1.2-2 New Renewables Capacity Supported by Green Power Markets

Source	MW	%
Wind	1215.4	86.0
Biomass	121.2	8.6
Geothermal	60.4	4.3
Small Hydro	10.5	0.7
Solar	6.1	0.4
Total	**1413.6**	**100.0**

Source: Green Power: An Emerging Market for Renewable Energy, National Renewable Energy Laboratory 2003

Utility market research shows that the role of wind energy in green power markets and programs surpasses all other renewables (National Renewable Energy Laboratory 2003).

- •Wind represents 93% of the capacity installed to meet consumer demand for green power.
- •Nearly half of the utility green-pricing programs are supplied exclusively with wind power, and 80% include wind in their green-pricing portfolios
- •Of the green-pricing programs with the highest participation rates, 9 out of 10 offer wind power.
- •Of the green-pricing programs with the lowest price premiums, 7 out of 10 are marketing wind power.

Because of the customer demand for green power there have been a proliferation of requests from electric utilities to purchase wind power. Northwestern Energy has completed detailed studies and demand forecasts for their system as part of their Integrated Resource Planning (IRP) process. In January 2004, NWE presented a Resource Procurement Plan to the Montana Public Service Commission. Analyses in the Resource Procurement Plan identified certain resources and quantities that were beneficial to NWE and the Default Supply customers in that they lowered both the expected cost to serve the customer and the overall risk profile of the resource portfolio. As a result NWE has recently issued (July 2, 2004) an RFP for resource additions, including 300 MW of wind power.

Table 1.2-3 the requested resource addition types and quantities identified as beneficial to NWE' s default supply portfolio (NWE 2004).

Table 1.2-3 Northwestern Energy Resource Addition Types and Megawatts of Capacity

Time Period	Base load	Dispatchable/Shaped	Wind
Present to June 30, 2007	0-100 MW	175-310 MW	150 MW
July 1, 2007 and Beyond	0-550 MW	175-310 MW	150 MW

Source : NEW 2004.

Montana Renewable Energy Incentives

The Montana legislature in recent years (2001 to present) has passed legislation that provides a number of tax and other incentives for renewable energy development. A summary of some of the major laws that have been enacted that seek to promote renewable energy development including wind energy is presented below.

1) Property Tax Reduction For Renewable Generation Facilities of 1 MW or Greater - 15-24-1401 et seq. MCA

   Generating plants producing 1 megawatt or more by means of an alternative renewable energy source are eligible for the new or expanded industry property tax reduction on the local mill levy during the first nine years of operation, subject to approval by the local government. If approved the facility is taxed at 50 & of its taxable value in the first five years after the construction permit is issued. Each year thereafter the percentage is increased by equal percentages until the full taxable value is attained in the tenth year.

2) New or Expanded Industry Tax Credit- 15-31-124 et seq. MCA

   Businesses engaged in the production of energy by means of an alternative energy source are eligible for the new or expanded industry tax credit against corporate income tax. To be considered an expanding industry, total full-time jobs must increase 30% or more. The credit is equal to 1% of new wages paid in the state during the first 3 years of operation.

3) Alternative Energy Investment Tax Credit- 15-32-401 et seq. MCA

   Commercial and net metering alternative energy investments of $5,000 or more are eligible for up to 35% tax credit against individual or corporate income generated by the investment. The credit may only be taken against net income produced by the eligible equipment or by associated new business activity i.e. a commercial operation. Associated facilities, manufacturing plants producing the alternative energy equipment and industries using the energy created may use the tax credit. The tax credit must be taken in the year the equipment is placed in service; however, any portion of the tax credit that exceeds the amount of tax to be paid may be carried over and applied against state tax liability for the following 7 years.

4) Exemption from Wholesale Energy Transaction Tax-15-72-104 MCA

   Electricity from wind generation on state lands or on a reservation is exempt for the wholesale energy transaction tax of $0.00015kWH transmitted.

5) Tax Credits for Certified Montana Venture Capital Companies-90-8-101,et seq. MCA

Recognized nonfossil forms of energy generation are one of the categories in which Montana venture capital companies may invest. These certified companies were encouraged through the granting of tax credits to investors. The amount of tax credits was capped by legislation and has since been exhausted. The state currently cannot offer tax credits unless the legislature authorizes additional credits.

Customer Purchase of Green Energy

Following similar programs across the nation and the region NWE began offering its customers the option of purchasing green power in 2003. Known at the E+ Green Program, Montana residential and commercial customers for an extra monthly charge can purchase blocks of electricity generated from renewable energy resources such as wind and solar. For each mega-watt of electricity generated from a renewable project a "tag" is tracked for the environmental benefits of that renewable project. Under the E+ Green program customers buy 100 kwh blocks of a "tag". Funds collected from E+Green support current and future renewable energy projects. One portion is paid to the owner of VCWEP that provided the "tag" to cover their costs of building and operating their plant. Other portions are invested in developing new renewable energy projects in Montana and the region and in helping build awareness and support for additional renewable energy resources.

BLM Wind Energy Policy and Wind Energy Development Programmatic Environmental Impact Statement

Wind energy is one of the many energy sources now being developed on federal lands, with approximately 500 MW of installed wind capacity currently occurring on BLM administered lands under right-of-way (ROW) grants administered by BLM in accordance with the requirements of the Federal Land Policy and Management Act of 1976 (FLPMA).

Another indication that wind generation is the fastest growing energy technology in the United States is evidenced by BLM's establishment of interim guidance for processing applications for wind energy on public lands administered by BLM

Consistent with the President's National Energy Policy that encourages development of renewable resources including wind energy, the BLM prepared a National Energy Policy Implementation Plan in 2001 that included a variety of tasks related to the development of energy resources on public lands. (BLM Information Bulletin No. 2001-138 and 2002-011).

The BLM also issued an Instruction Memorandum to their field offices in October 2002 that provided an interim wind energy development policy that provides guidance for processing right-of-way applications and applications for wind energy development projects on BLM lands while the Wind Energy Development PEIS is being prepared (Instruction memorandum No2003-020). It is BLM's general policy to encourage the development of wind energy in acceptable areas.

In addition the BLM and the Department of Energy's National Renewable Energy Laboratory (NREL) established a partnership to conduct an assessment of wind energy and other renewable energy resources on public lands in the western United States.

BLM has also prepared a Draft Wind Energy Development Programmatic Environmental Impact Statement (PEIS) in September 2004 to evaluate additional wind energy development on public lands including the establishment of a national wind energy policy.

The objectives of the draft PEIS are to (1) assess the environmental, social, and economic impacts associated with wind energy development on BLM administered land, and (2) evaluate a number of alternatives to address the question of whether the proposed action presents the best management approach for the BLM to adopt, in terms of mitigating potential impacts and facilitating wind energy development.

The BLM's proposed Wind Energy Development Program evaluated in the PEIS will replace the Interim Wind Energy Policy and will provide expanded direction for wind energy projects. The proposed program will establish policies and BMP's that are specific to issues associated with wind energy development.

As part of the proposed action addressed in the PEIS, a number of existing BLM land use plans would be amended to address wind energy development. Additional land use plans may be amended or revised in the future to directly incorporate the policies and BMPs contained in the BLM's proposed Wind Energy Development Program. Alternatively BLM Field Office staff may choose to implement elements of the program on a project-by-project basis. Each wind energy development project would be evaluated individually, and the appropriate programmatic policies and BMPs and local stipulations would be applied.

U.S. Fish and Wildlife Service Wind Energy Development Guidelines

The U.S. Fish and Wildlife Service developed guidelines to assist the wind industry in avoiding or minimizing impacts on wildlife by wind energy development. The guidelines contain a procedure for pre-development evaluation of potential wind resource areas based on their impacts on wildlife and recommendations for siting, designing, constructing and operating wind turbines within areas with wind resource potential. The evaluation procedure was developed by a team of Federal, state, university and industry biologists to rank potential wind development sites in Montana, and is already in use in that area.

1.2.2. Transmission Line Interconnection

Generated power typically requires interconnection with a high-voltage electrical transmission system for delivery to purchasing retail utilities. Wind Hunter has submitted a request for transmission interconnection services for VCWEP to Western. A new 30-mile 230kV transmission line would be constructed by Wind Hunter to a new Western substation that would be located just east of NWE's Richardson Coulee

Substation. From the new substation power would be transmitted over the Western "Hi-Line" transmission line.

Western is currently working with Wind Hunter in responding to the request for interconnection with Western's transmission system. Wind Hunter has entered into a transmission service agreement with Western in March 2004 for firm point-to-point transmission service for 50 MW. Under Westerns' 1998 Notice of Final Open Access Transmission Service Tariff, Western is obligated to provide transmission service and network integration service to the extent Western has available transmission capability. Wind Hunter and Western have also entered into a construction agreement in March 2004 for Western to construct the 230kV Antelope Creek Substation for transmission interconnection. Also addressed in the agreements are ancillary service for the integrated system, reactive supply and voltage control, regulation and frequency response service, energy imbalance service, operating reserve or spinning reserve service, service and scheduling, system control and dispatch service. Western is conducting a system impact and system cost study.

Western will adhere to the following directives and policies and procedures for providing transmission service to the VCWEP.

1) Providing Transmission Service - Western published in the Federal Register on January 6, 1998, its Notice of Final Open Access Transmission Service Tariff (Tariff). Under Westerns's Tariff, Western offers transmission service for use of available transmission capacity in excess of the capacity Western requires for the delivery of long-term capacity and energy to current contractual electric customers of the Federal government. Under the Tariff Western provides firm and point-to-point transmission service and network integration transmission service to the extent Western has available transmission capability.

2) Addressing an Interconnection - Application-Western's General Guidelines for Interconnection provide a process for addressing applications for interconnection. The process dictates that Western respond to an application as presented by the applicant. Section 211 of the Federal Power Act requires transmission services be provided upon application if transmission capacity is available.

3) Protecting Transmission System - Reliability and Service to Existing Customers-Western's General Guidelines for Interconnection provides for transmission and system studies to ensure that system reliability and service to existing customers are not adversely affected.

1.3. BENEFITS OF OF THE PROJECT

The Valley County Wind Energy Project is one of many wind energy projects being developed throughout the western United States. Numerous surveys have consistently shown that the public prefers wind and other renewable energy forms over conventional sources of generation. Wind energy is a free, renewable resource, so no matter how much is used today, there will still be the same supply in the future. Wind energy is also

a source of clean non-polluting electricity. Unlike conventional power plants, wind plants emit no air pollutants or greenhouse gases.

Wind power is also competitive with conventional power plants. With the recent spike in natural gas prices competition from renewable energy such as wind will reduce the demand for natural gas easing tightness in the market and resulting in lower prices for consumers and businesses. According to the US Department of Energy, new, utility scale-wind projects are being built all around the United States today, with energy costs ranging from 3.9 cents per kilowatt-hour (at very windy sites in Texas) to 5 cents or more (in the Pacific Northwest). These costs are competitive with the direct operating costs of many conventional forms of electricity generation now, and prices are expected to drop even further over the next 10 years. If wind generating systems are compared with fossil-fueled systems on a "life cycle" cost basis (counting fuel and operating expenses for the life of the generator), wind costs are much more competitive with other generating technologies because there is no fuel to purchase and minimal operating expenses.

Wind energy is good for the economy and national security. It avoids the external or societal costs associated with conventional resources, namely the trade deficit from importing foreign oil and other fuels, the health and environmental costs of pollution, and the cost of depleted resources. Wind energy is a domestic, reliable resource that provides more jobs per dollar invested than other energy technology, according to the US Department of Energy. Wind turbine and component manufacturers contribute directly to the economies of 44 states, creating thousands of jobs. Overall national security can be enhanced by the development of diversified and distributed electricity generation sources such as wind.

Rural communities near existing infrastructure have embraced wind power as a source of revenue for ranchers and farmers by providing income opportunities from leasing farmland to wind developers, tax payments to county governments, as well as construction and maintenance jobs for local residents.

The Valley County Wind Energy Project will contribute substantial positive economic benefit to Valley County and to the State of Montana over an 11-year period from 2006 to 2017 as the 500 MW wind farm is developed in four phases over that time period. Project construction would result in temporary increased employment in Valley and surrounding counties. As VCWEP phases are completed new permanent jobs will be created for the operation and maintenance of VCWEP. There will also be indirect economic benefits from construction and operation of VCWEP as wages, boosting the local economy and creating additional jobs. In addition VCWEP will bring new tax revenue to the county through additional annual property tax payments. Valley County would receive other fiscal benefits from VCWEP such as increased sales and use taxes, license and permit fees and charges for services. Also 2.5% royalties from gross annual generation revenue would be variously distributed to private landowners who lease their land, to the State of Montana for use of state land and to the BLM for the use of federal lands. Another benefit that other wind power projects have induced is an increase in tourism. In Washington State, the Stateline Wind Power Project near Walla Walla had more than 1,600 visitors who took guided tours in its first three months of operation.

Based on this experience, it is likely that tourists would be attracted to the VCWEP area; however VCWEPed volume of visitors to this project area on an annual basis is unknown.

The Valley County Wind Energy Project is consistent with and supported by goals and objectives set forth in the Valley County Land and Resource Plan (April 2003) that encourage appropriate energy resource exploration and development consistent with sound economic and environmental practices.

In addition, Two Rivers Economic Growth (a coalition for the future development of Valley County) has stated that besides employment opportunities associated with construction and operation of the wind farm, the VCWEP will provide the opportunity for other companies in need of energy to relocate to Valley County thereby furthering much needed economic development in the county and the region.

In summary, electrical consumers in western states need increased power production to serve predicted increasing long-term demand and new and/or upgraded high voltage transmission lines to deliver the power. This demand will increasingly be met by production of green energy. The proposed VCWEP is intended to help meet this growing regional demand for renewable wind generated electricity.

1.4. AUTHORIZATIONS, PERMITS, REVIEWS AND APPROVALS

The VCWEP. would conform to all relevant Federal, state and local statutes, regulations and plans. Table 1-4-1 lists the anticipated Federal, state and local authorizations, permits, reviews and approvals for the proposed Valley County Wind Energy Project (VCWEP.)

Table 1-4.1 Authorizations, Permits, Reviews, and Approvals

Action Requiring Permit, Approval or Review	Permit/Approval	Accepting Authority/ Approving Agency	Statutory Reference
FEDERAL			
Power Line Construction and Operation on Land Under Federal Management	Right of Way (ROW) Grant	BLM	FLPMA 1976 (PL94-579) USC 1761-1771 and 43 CFR 2800
230kV Transmission Line Interconnection	Interconnection Agreement	Western Area Power Administration (WAPA)	Section 211 Federal Power Act, WAPA General Guidelines for Interconnection
National Environmental Policy Act (NEPA) Compliance to Grant ROW and WAPA Interconnection Agreement	Environmental Impact Statement (EIS)	WAPA and BLM	NEPA, CEQ 40 CFR Part 1500-et. seq.
Construction, operation and abandonment of transmission lines across or within highway ROWs	Permit to cross Federal Aid Highway	Federal Highway Administration (FHWA)	23 CFR 1.23 and 1.27 USC Sections 116, 123, 315 (23 CFR Part 645 Subpart B), 23 CFR 77
Grant of ROW by BLM	Endangered Species Act Compliance by FS and by FWS Biological Assessment (BA) and Biological Evaluation (BE)	U.S. Fish & Wildlife Service	Endangered Species Act Section 7 Consultation
Grant of ROW by BLM	National Historic Preservation Act Compliance Section 106	BLM and State Historic Preservation Office	National Historic Preservation Act of 1966, 36 CFR part 800, 16 USC 47
Tower location and height relative to air traffic corridors	Notice of Proposed Construction or Alteration	Federal Aviation Administration (FAA)	49 USC 1501 13 CFR 77 Objects Affecting Navigable Airspace
Fill in a Wetland	Clean Water Act	Army Corps of Engineers	Clean Water Act Section 404

Action Requiring Permit, Approval or Review	Permit/Approval	Accepting Authority/ Approving Agency	Statutory Reference
STATE OF MONTANA			
Review of potential adverse water quality impacts potentially associated with discharges of dredged or fill materials in wetlands and other waters of the U.S.	Section 401 Water Quality Certification	Montana Department of Environmental Quality (DEQ)	Section 401 of the Clean Water Act
Authorizes storm water discharges to surface waters of the state associated with the construction activities	General Discharge Permit for Storm Water Associated with Construction Activity	Montana Department of Environmental Quality (DEQ)	Montana Water Quality Act (75-5-401 et seq., MCA)
Permits construction activities in or near perennial streams on public and private lands	Montana Joint Application: 310 Permit	Montana Department of Environmental Quality (DEQ)	Montana Natural Streambed and Land Preservation Act (75-7-101 et seq., MCA)
Authorizes construction and operation of certain transmission lines with a design capacity greater than 69kV	Certificate of Environmental Compatibility	Montana Department of Environmental Quality (DEQ)	Major Facility Siting Act (75-20-101 et seq., MCA)
Allows construction activity within a designated 100 year flood plain	Montana Joint Application; Flood Plain Development Permit	Montana Department of Environmental Quality (DEQ)	Montana Floodplain and Floodway Management Act (76-5-401 through 406, MCA)
Authorizes short-term exemptions from certain surface water quality standards	Montana Joint Application: 318 Permit	Montana Department of Environmental Quality (DEQ)	Montana Water Quality Act (75-5-101 MCA)
Permit to excavate 10,000 cubic yards or more total aggregate from one or more pits regardless of surface ownership	Open Cut Permit (if new gravel sources are needed for VCWEP)	Montana Department of Environmental Quality (DEQ)	Open Cut Mining Act (84-4-401 et seq., MCA)

Action Requiring Permit, Approval or Review	Permit/Approval	Accepting Authority/ Approving Agency	Statutory Reference
STATE OF MONTANA (CONT.)			
Easements and authorization of construction activities on state trust lands and navigable waterways	Easement/Land Use License	Board of Land Commissioners Montana Department of Natural Resources and Conservation	Title 77, MCA
Leasing of State Lands	State Land Lease	Montana Department of Natural Resources and Conservation	Title 77, Chapter 6, MCA
Grant utility crossing permits for transmission line and access roads that may encroach on state maintained routes	Utility Crossing Permit	Montana Department of Transportation (MDOT)	RW 131 and/or RW 20
Consults with project applicants and state agencies regarding impacts on cultural resources that re listed or eligible for listing on the NRHP	Section 106 of the National Historic Preservation Act	State Historic Preservation Act (SHPO)	Montana Antiquities Act (22-3-421 through 442, MCA)
Facilities Construction	Building permits per relevant building codes	Montana Department of Labor and Industry, Building Codes Bureau	Title 50, Chapter 60 and Title 50, Chapter 74, MCA
VALLEY COUNTY			
Containment, suppression and eradication of noxious weeds	Noxious Weed Management Program	Valley County Weed Control District	Title 7 (7-22-2101-2153, MCA)
ROW easement grants and road crossing permits for county property and roadways	Easement grants and road crossing permit	Valley County Commissioners	